



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

Watanabe et al., et al : Group Art Unit: 1752

Application No. 10/736,334 : Examiner: Thorl Chea

Filed: December 16, 2003

For: PHOTOTHERMOGRAPHIC MATERIAL

DECLARATION UNDER 37 C.F.R. §1.132

Director of Patents and Trademarks

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

I, Hisashi Mikoshiba, do declare and state as follows:

I graduated from Tokyo Institute of Technology with a Master's Degree in Science and Engineering, Department of Chemical Engineering in March 1987;

I joined Fuji Photo Film Co., Ltd. in April 1987, and since that time I have been engaged in research and development of organic materials for photosensitive materials at Ashigara laboratories (currently Synthetic Organic Chemistry Laboratories); and

I am familiar with the Office Action of November, 15, 2005, and understand that the Examiner has rejected Claims 1 to 14, and 16 under 35USC§103(a) as being unpatentable over Okada et al (US Patent No.,

6,120,983) in view of Ichikawa et al (US Patent No. 6,593,075), Claims 15 and 17 to 19 under 35USC§103(a) as being unpatentable over Okada et al. (US Patent No., 6,120,983) in view of Ichikawa et al (US Patent No. 6,593,075), and further in view of EP 1096310A2 (EP'310), Claims 1 - 19 under 35 U.S.C.102 (e) as being unpatentable over, or in the alternative, under 35 U.S.C. 103(a) as being unpatentable over Ohzeki et al. (US 2004/0033454A1), and Claims 1 - 19 under 35 U.S.C. 103(a) as being unpatentable over Oka et al. (US 2003/0232288), and the Examiner has provisionally rejected Claims 1 to 19 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 18, 23, and 29 to 40 of U.S. Patent Application No. 10/285,644 (Oka et al.) .

The following additional comparative experiments were carried out by me or under my supervision in order to make the advantages of the subject matter more clear.

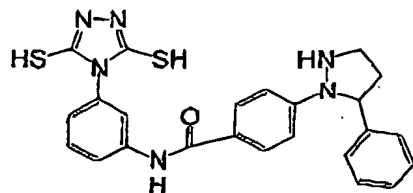
Comparative Experiment

Samples No. 10-1 to No.10-11 were prepared in the same manner as sample 2 in Example 1 (Table1) of the specification, except that compound No. 1 used in sample 2 was replaced with an equimolar amount of one of the compounds shown below. Thus obtained samples No. 10-1 to No. 10-11 were stored under the same conditions as in Example 1 of the specification and the photographic performances thereof were evaluated in the same manner as in Example 1 of the specification.

The results obtained are listed in the following Table.

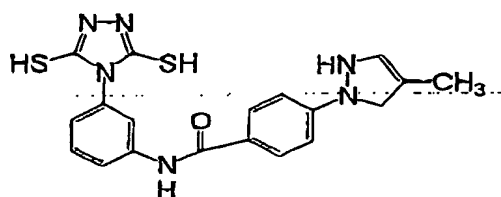
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Comparative compound-3



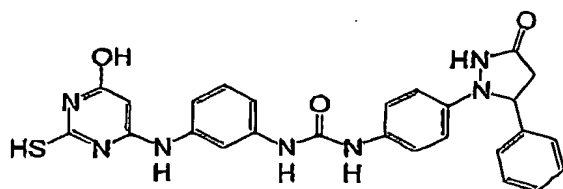
Pyrazolidone group of (2) is replaced with pyrazolidine group

Comparative compound-4



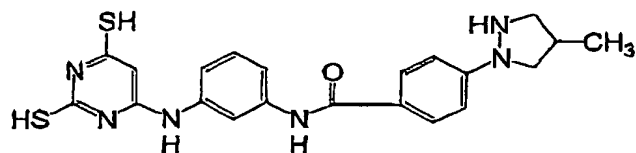
Pyrazolidone group of (3) is replaced with pyrazoline group

Comparative compound-5

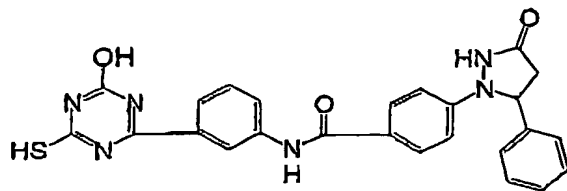


Monothiol corresponding to (13)

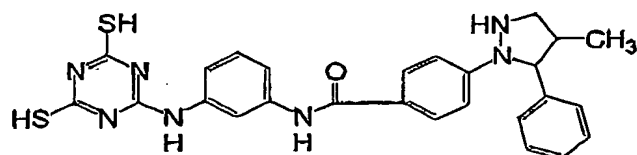
Comparative compound-6



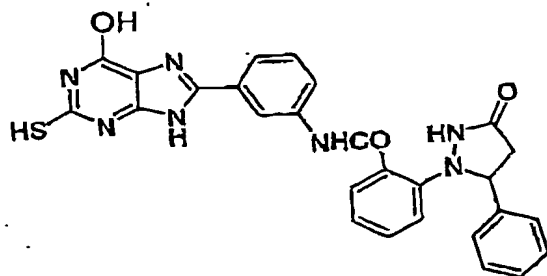
Pyrazolidone group of (15) is replaced with pyrazolidine group

Comparative compound-7

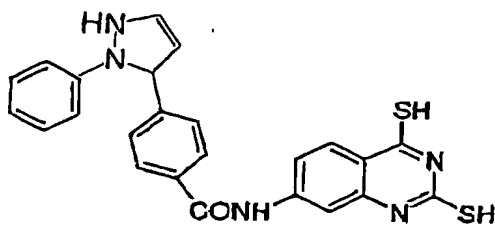
Monothiol compound corresponding to (18)

Comparative compound-8

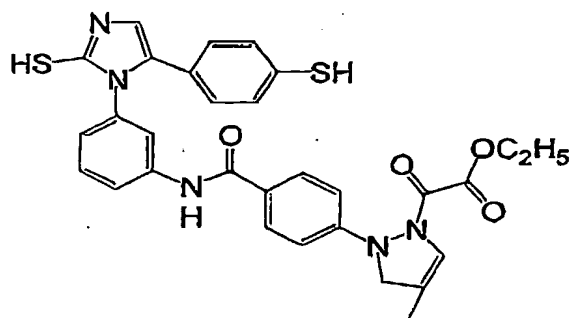
Pyrazolidone group of (21) is replaced with pyrazolidine group

Comparative compound-9

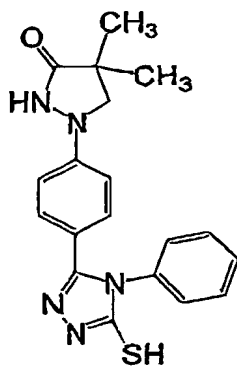
Monothiol compound corresponding to (24)

BEST AVAILABLE COPY**Comparative compound-10**

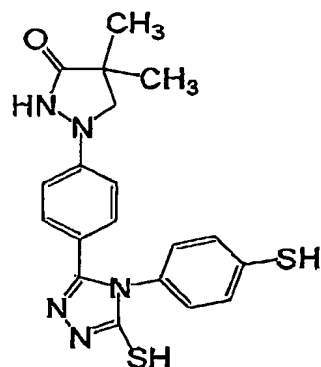
Pyrazolidone group of (25) is replaced with pyrazoline group

Comparative compound-11

Pyrazolidone group of (30) is replaced with pyrazoline group

Comparative compound-12

I¹-71 of Oka et al.

Compound No.12' (Compound of the present invention)

Dithiol compound corresponding to I''-71 of Oka et al.

(2), (3), (13), (15), (18), (21), (24), (25) and (30) described above refer to the compound numbers described in the specification.

TABLE(continued from Table 1 of the specification)

Sample No.	Compound No.	Addition Amount mol/mol of Ag	Dmin	Dmax	Relative Sensitivity	Remarks
10-1	Comparative Compound-3	3×10^{-3}	0.18	4.1	163	Comparative Example
10-2	Comparative Compound-4	3×10^{-3}	0.18	4.2	187	Comparative Example
10-3	Comparative Compound-5	3×10^{-3}	0.18	4.0	177	Comparative Example
10-4	Comparative Compound-6	3×10^{-3}	0.18	4.1	167	Comparative Example
10-5	Comparative Compound-7	3×10^{-3}	0.18	4.0	182	Comparative Example
10-6	Comparative Compound-8	3×10^{-3}	0.18	4.2	191	Comparative Example
10-7	Comparative Compound-9	3×10^{-3}	0.18	4.3	186	Comparative Example
10-8	Comparative Compound-10	3×10^{-3}	0.18	4.1	178	Comparative Example
10-9	Comparative Compound-11	3×10^{-3}	0.18	4.2	184	Comparative Example
10-10	Comparative Compound-12	3×10^{-3}	0.18	4.0	188	Comparative Example
10-11	12' Compound of the present invention	3×10^{-3}	0.18	4.3	220	Present Invention

By comparing the results shown in Table 1 of the specification and the results shown in the above table, it is found that the unexpectedly remarkable enhancement of sensitivity was obtained by using a compound of the present invention, which has at least two mercapto groups, compared with a sample using a compound having only one mercapto group, even though these compounds are common in having a pyrazolidone group as a reducing group (comparison between sample No. 3 and sample No. 10-3, comparison between Sample No. 6 and sample No. 10-5, comparison between sample No. 10-10 and sample No.10-11). In addition, it is also found that the

unexpectedly remarkable enhancement of sensitivity was obtained by using a compound of the present invention, which has a pyrazolidone group as a reducing group, compared with samples using a compound having a pyrazolidine group, even though these compounds are common in having two mercapto groups (comparison between sample No. 3 and samples No. 10-1, No. 10-4, and No. 10-6). Furthermore, it is also found that the sensitivity is low in samples No. 10-2, No. 10-8, and No. 10-9, in which Comparative compounds 4, 10, and 11 were used respectively.

Conclusions

The present invention showed unexpectedly greater improvements in sensitivity.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further, that these statements were made with the knowledge that willful false statements and like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

DATE: May 12, 2006

Hisashi Mikoshiba

HISASHI MIKOSHIBA